

What is claimed is:

1           1.       A compacting broach for forming a cavity in the intramedullary canal of a  
2 bone to receive a prosthetic component, comprising  
3           an elongate body having a central longitudinal axis, a rearward end, a forward  
4 end, and a plurality of cutting teeth on a surface of said elongated body and being  
5 matched to corresponding corners of the prosthetic component; and  
6           a distal tip at said forward end of said elongate body, said distal tip comprising a  
7 plurality of members extending radially to said central longitudinal axis and extending  
8 longitudinally, distally from said forward end of said body to converge at an apex aligned  
9 with said central longitudinal axis, said fins being disposed inwardly of said cutting teeth.

1           2.           A compacting broach for forming a cavity in the intramedullary  
2 canal of a bone to receive a prosthetic component, comprising  
3           an elongate body having a central longitudinal axis, a rearward end, a forward  
4 end, a plurality of corner edges extending longitudinally along said body to said forward  
5 end, cutting teeth along said corner edges, and side walls connecting said cutting teeth  
6 of adjacent corner edges, said side walls extending inwardly from said cutting teeth in  
7 the direction of said central longitudinal axis, said corner edges being matched to  
8 corresponding corners of the prosthetic component; and  
9           a distal tip at said forward end of said body, said distal tip comprising a plurality  
10 of fins extending radial to said central longitudinal axis and extending longitudinally,  
11 distally from said forward end of said body to converge at an apex aligned with said  
12 central longitudinal axis, said fins being disposed inwardly of said cutting teeth.

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14           3.       The compacting broach recited in claim 2 wherein said body comprises  
15 four corner edges matched to corresponding corners of a prosthetic component of  
16 rectangular cross-section.

1           4.     The compacting broach recited in claim 2 wherein said side walls have a  
2 concave configuration.

1           5.     The compacting broach recited in claim 2 wherein each of said side walls  
2 comprises first and second side wall segments extending angularly inwardly from said  
3 teeth of said adjacent corner edges, respectively, in the direction of said central  
4 longitudinal axis and converging at a point.

1           6.     The compacting broach recited in claim 2 wherein said distal tip comprises  
2 four fins at 90 degree spaced locations about said central longitudinal axis.

1           7.     The compacting broach recited in claim 6 wherein said fins are aligned  
2 with said teeth of said corner edges, respectively.

1           8.     The compacting broach recited in claim 2 wherein said distal tip comprises  
2 three fins.

1           9.     The compacting broach recited in claim 2 wherein said fins are planar.

1           10.    The compacting broach recited in claim 2 wherein said distal tip has a  
2 bullet-shape in longitudinal profile.

1           11.    A method of forming an elongate cavity in the intramedullary canal of a  
2 bone to receive a prosthetic component, comprising the steps of  
3 introducing a distal tip of a compacting broach into the intramedullary canal;  
4 contacting the cortical bone with fins of the distal tip at locations about a

5 longitudinal axis of the canal to center the compacting broach in the canal;  
6 advancing the compacting broach into the canal with the distal tip centering the  
7 compacting broach in the canal as it is advanced;  
8 cutting, as the compacting broach is advanced, the cortical bone with cutting  
9 teeth disposed at corner edges of the compacting broach extending proximally from the  
10 distal tip;  
11 compacting, as the compacting broach is advanced, cancellous bone in the canal  
12 with side walls of the compacting broach extending inwardly between the cutting teeth  
13 of adjacent corner edges;  
14 withdrawing the compacting broach from the canal after advancement to a  
15 desired depth to leave an elongate cavity in the canal having a cross-sectional  
16 configuration defining a plurality of corners corresponding to the corner edges.

1 12. The method recited in claim 11 and further including, subsequent to said  
2 step of withdrawing, the steps of inserting a prosthetic component in the cavity with  
3 corners of the prosthetic component aligned with the corners of the cavity and, as the  
4 prosthetic component is inserted, compacting cancellous bone in the canal with side  
5 walls of the prosthetic component.